BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Durbin, Anna Palmer	Associate Professor
eRA COMMONS USER NAME (credential, e.g., agency login) ADURBIN1	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
University of Michigan, Ann Arbor, MI	BS/Pharm	05/83	Pharmacy
Wayne State Univ., School of Medicine, Detroit, MI	MD	06/87	Medicine
Wayne State Univ., Detroit Receiving Hosp., Detroit, MI	Resident	1987-90	Internal Medicine
Wayne State Univ., Detroit Receiving Hosp., Detroit, MI	Chief Resident	1990-91	Internal Medicine
Wayne State Univ., Div. of Infectious Disease, Detroit Med Center	Fellow	1991-94	Infectious Diseases

A. Personal Statement

I am currently an Associate Professor in the Department of International Health at the Johns Hopkins Bloomberg School of Public Health (JHSPH). Prior to attaining this faculty position, I spent 5 years in the Laboratory of Infectious Diseases, NIAID, NIH using recombinant DNA technology to develop live attenuated respiratory virus vaccines. I am a board certified physician (Internal Medicine and Infectious Diseases) who has extensive experience in the conduct of early phase clinical trials. My research interest involves the human responses to live attenuated vaccines and subunit protein vaccines, with a primary focus on dengue and malaria vaccines. We have utilized our clinical studies to characterize the human clinical and immune responses to live attenuated dengue vaccines and used these studies as a model for natural dengue infection. By fully characterizing the cellular and humoral immune response to the vaccines we administered to healthy volunteers, we hope to identify correlates of immunity to the target pathogens as well optimize the formulation of different vaccines. I have also been very involved in teaching at the Bloomberg School of Public Health. I have taught the Biological Basis of Vaccine Development since 2002 and have coordinated the Vaccine Science and Policy Certificate Program since 2006. I have advised approximately 35 MPH and MHS students and four PhD students during my tenure. One of my PhD advisees has graduated and is now an assistant professor at the University of Pittsburgh School of Public Health and another is involved with the dengue program at the World Health Organization.

B. Position and Honors

Positions

1994-1999: Clinical Fellow, Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health
1999 – present: Joint appointment, Department of Medicine, Division of Infectious Diseases, Johns Hopkins School of Medicine
1999 – 2007: Assistant Professor, Department of International Health, Johns Hopkins Bloomberg School of Public Health
2007 – present: Associate Professor, Department of International Health, Johns Hopkins Bloomberg School of Public Health

Honors

1980 Rho Chi Honor Society, College of Pharmacy
1983 Julia Emmanuel Award for Academic Excellence
2005 National Institutes of Health Merit Award for outstanding basic and translational research in developing vaccines for the prevention of respiratory virus and flavivirus diseases

2010 Clinical Infectious Diseases Award for Outstanding Review
2011 National Institutes of Health Director's Award
2013 Instituto Butantan Medal for dengue vaccine development

Other Experience and Professional Memberships (Selected)

2002 – 2006 Temporary Advisor, WHO Task Force on Clinical Trials of Dengue Vaccines
2002 – 2008 CDC Yellow Fever Vaccine Working Group
2008 – 2011 Chair, Safety monitoring committee, Sanaria sponsored Phase 1/2a trial of the PfSPZ vaccine administered subcutaneously or intradermally to malaria-naïve adult volunteers
2011 – present Chair, Safety monitoring committee, Sanaria sponsored Phase 1, Open-Label, Dose-Escalation Clinical Trial with Experimental Challenge to Evaluate Intravenous Administration of the PfSPZ Vaccine in Malaria-Naive Adults
2011 – present Chair, Safety monitoring committee, Phase 1 Study of the Safety and Immunogenicity of *Na*-GST-1/ Alhydrogel® with or without GLA-AF in Brazilian Adults
2008 – 2012 Member, WHO Advisory Committee on Dengue and other Flavivirus Vaccines
2008 – 2011 Brighton Collaboration Viscerotropic Disease Working Group
2009 – 2010 DSMB Chair, Juvaris sponsored Phase II clinical trial of fluzone administered with and without a novel adjuvant
2010 – present Member, Vaccines and Related Biological Products Advisory Committee (VRBPAC), Center for Biologics Evaluation and Research, FDA
2013 – present Member, Johns Hopkins Bloomberg School of Public Health Institutional Review Board

Member: American College of Physicians, American Society of Virology, Infectious Diseases Society of America, and the American Society of Tropical Medicine and Hygiene

C. Selected Publications (Most relevant selected from 63 peer-reviewed publications)
Most relevant to current application

1. **Durbin AP**, Karron RA, Thumar B, Sun W, Vaughn DW, Reynolds MJ, Perreault JR, Men R, Lai CJ, Elkins WR, Chanock RM, Murphy BR, Whitehead SS. A live attenuated dengue virus type 4 vaccine candidate with a 30 nucleotide deletion in the 3´ untranslated region is highly attenuated and immunogenic in humans. Am J Trop Med Hyg, 2001; 65:405-413.
2. **Durbin, AP**, Whitehead SS, McArthur J, Perreault JR, Blaney JE Jr., Thumar B, Murphy BR, and Karron RA. rDEN4Δ30, a live attenuated dengue virus type 4 vaccine candidate, is safe, immunogenic, and highly infectious in healthy adult volunteers. J Infect Dis. 2005:191; 710-718.
3. **Durbin, AP**, McArthur JH, Marron JA, Blaney JE Jr., Thumar Wanionek K, Murphy BR, and Whitehead SS. 2006. The live attenuated dengue serotype 1 vaccine rDEN1Δ30 is safe and highly immunogenic in healthy adult volunteers. Human Vaccin 2(4):167-173.
4. **Durbin, AP**, McArthur JH, Marron JA, Blaney JE Jr, Thumar B, Wanionek K, Murphy BR, and Whitehead SS. 2006. rDEN2/4Delta30(ME), A Live Attenuated Chimeric Dengue Serotype 2 Vaccine Is Safe and Highly Immunogenic in Healthy Dengue-Naive Adults. Hum Vaccin 2(6):255-260.
5. Wright PF, Ankrah S, Henderson SE, **Durbin AP**, Speicher J, Whitehead SS, et al. Evaluation of the Langat/dengue 4 chimeric virus as a live attenuated tick-borne encephalitis vaccine for safety and immunogenicity in healthy adult volunteers. Vaccine 2008 Feb 13;26(7):882-90.
6. **Durbin, AP**., M. J. Vargas, K. Wanionek, S. N. Hammond, A. Gordon, C. Rocha, A. Balmaseda, and E. Harris. 2008. Phenotyping of peripheral blood mononuclear cells during acute dengue illness demonstrates infection and increased activation of monocytes in severe cases compared to classic dengue fever. Virology 2008;376:429-35.
7. **Durbin AP**, McArthur JH, Marron JA, Blaney JE Jr, Thumar B, Wanionek K, Murphy BR, and Whitehead SS. Phase I Study of the Safety and Immunogenicity of rDEN4Δ30-200,201 a Live Attenuated Virus Vaccine Candidate for the Prevention of Dengue Serotype 4. Am J Trop Med Hyg 2008;79(5):678.
8. van Panhuis WG, Luxemburger C, Pengsaa K, Limkittikul K, Sabchareon A, Lang J, **Durbin AP**, and Cummings D.A. Decay and Persistence of Maternal Dengue Antibodies among Infants in Bangkok. *Am J Trop Med Hyg*. 2011 Aug;85(2):355-62

9. **Durbin AP**, Kirkpatrick BD, Pierce KK, Schmidt AC, Whitehead SS. Development and clinical evaluation of multiple investigational monovalent DENV vaccines to identify components for inclusion in a live attenuated tetravalent DENV vaccine. Vaccine. 2011 Jul 21.
10. **Durbin AP**, Schmidt A, Elwood D, Wanionek KA, Lovchik J, Thumar B, et al. Heterotypic dengue infection with live attenuated monotypic dengue virus vaccines: implications for vaccination of populations in areas where dengue is endemic. J Infect Dis. 2011 Feb;203(3):327-34.
11. **Durbin AP**, Whitehead SS, Shaffer D, Elwood D, Wanionek K, Blaney JE, Jr., et al. A single dose of the DENV-1 candidate vaccine rDEN1Δ30 is strongly immunogenic and induces resistance to a second dose in a randomized trial. PLoS Negl Trop Dis. 2011;5(8).
12. Lindow JC, Borochoff-Porte N, **Durbin AP**, Whitehead SS, Fimlaid KA, Bunn JY, et al. Primary vaccination with low dose live dengue 1 virus generates a proinflammatory, multifunctional T cell response in humans. PLoS Negl Trop Dis 2012;6(7):e1742.
13. **Durbin AP**, Mayer SV, Rossi SL, Amaya-Larios IY, Ramos-Castaneda J, Eong Ooi E, et al. Emergence potential of sylvatic dengue virus type 4 in the urban transmission cycle is restrained by vaccination and homotypic immunity. Virology 2013 Feb 25.
14. **Durbin AP**, Whitehead SS. The dengue human challenge model: Has the time come to accept this challenge? *J Infect Dis* 2013 Mar;207(5):697-9
15. **Durbin AP**, Kirkpatrick BD, Pierce KK, Elwood D, Larsson C, Lindow JC, et al. A single dose of any of four different live attenuated tetravalent dengue vaccines is safe and immunogenic in flavivirus-naïve adults: a randomized, double blind clinical trial. *J Infect Dis* 2013 Mar;207(6):957-65.
16. Smith SA., de Alwis R., Kose N., **Durbin, AP**., Whitehead SS, de Silva AM., Crowe JE Jr. Human monoclonal antibodies derived from memory B cells following live attenuated dengue virus vaccination or natural infection exhibit similar characteristics. *J Infect Dis.* 2013. **207***:*1898-1908.
17. VanBlargan LA, Mukherjee S, Dowd KA, **Durbin AP**, Whitehead SS and Pierson TC. The type-specific neutralizing antibody response elicited by a dengue vaccine candidate is focused on two amino acids of the envelope protein. PLoS Pathog **2013**;9:e1003761.

Other relevant publications

18. **Durbin AP**, Whitehead SS. Dengue vaccine candidates in development. Curr Top Microbiol Immunol 2010;338:129-43.
19. Dowd KA, Jost CA, **Durbin AP**, Whitehead SS, Pierson TC. A dynamic landscape for antibody binding modulates antibody-mediated neutralization of West Nile virus. PLoS Pathog 2011 Jun;7(6):e1002111.s in development. Curr Top Microbiol Immunol 2010;338:129-43.
20. Cassetti MC, **Durbin A**, Harris E, Rico-Hesse R, Roehrig J, Rothman A, et al. Report of an NIAID workshop on dengue animal models. Vaccine 2010 Jun 11;28(26):4229-34
21. Bentsi-Enchill AD, Schmitz J, Edelman R, **Durbin A**, Roehrig JT, Smith PG, et al. Long-term safety assessment of live attenuated tetravalent dengue vaccines: deliberations from a WHO technical consultation. Vaccine 2013 May 28;31(23):2603-9
22. **Durbin AP**, Wright PF, Cox A, et al. The live attenuated chimeric vaccine rWN/DEN4Delta30 is well-tolerated and immunogenic in healthy flavivirus-naive adult volunteers. Vaccine **2013**
23. Lindow JC, Pierce KK, **Durbin AP**, Whitehead SS, Carmolli MP and Kirkpatrick BD. Vaccination of volunteers with low-dose, live-attenuated dengue viruses leads to distinct immunologic and virologic profiles. *Vaccine* 2013;31:3347-52.
24. Smith SA, de Alwis R, Kose N, **Durbin AP**, et al. Human Monoclonal Antibodies Derived From Memory B Cells Following Live Attenuated Dengue Virus Vaccination or Natural Infection Exhibit Similar Characteristics. *J Infect Dis* 2013;207:1898-1908.
25. Vanblargan LA, Jukherjee S, Dowd KA, **Durbin AP**, Whitehead SS, and Pierson TC. The type-specific neutralizing antibody response elicited by a dengue vaccine candidate is focused on two amino acids of the envelope protein. *PLoS Pathogens* 2013; 9(12):e1003761.
26. Althouse BM, **Durbin AP**, Hanley KA, Halstead SB, Weaver SC, and Cummings DA. Viral kinetics of primary dengue virus infection in non-human primates: a systematic review and individual pooled analysis. *Virology* 2014;452-453(13):237-46.

27. Mukherjee S, Dowd KA, Manhart CJ, Ledgerwood JE, **Durbin AP**, Whitehead SS, and Pierson TC. Mechanism and significance of cell type-dependent neutralization of flaviviruses. *J. Virol*. 2014;88(13):7210-20.
28. Weiskopf D, Angelo MA, Bangs DJ, Sidney J, Peters B, de Silva AD, Lindow JC, Diehl SA, Whitehead SS, **Durbin AP**, Kirkpatrick B, and Sette A. The human CD8+ T cell responses induced by a live attenuated tetravalent dengue vaccine are directed against highly conserved epitopes. *J Virol* 2014
29. Kirkpatrick BD*, **Durbin AP***, Pierce KK, Carmolli MP, Tibery C, Grier P, Hynes N, Diehl SA,Elwood D, Jarvis AP, Sabundayo BP, Lyon CE, Larsson CJ, Jo M, Lovchik J, Luke C, Walsh MC, Fraser EA, Subbarao K, Whitehead S[3]. Robust and balanced immune responses to all four dengue serotypes following a single dose of live attenuated tetravalent vaccine administered to healthy flavivirus-naïve adults. *J Infect Dis accepted*. * co-first authors

D. Research Support

The Bill and Melinda Gates Foundation 11/5/14 – 9/30/17
The Dengue Human Infection Model (DHIM): defining correlates of protection and advancing vaccine development.
The purpose of the grant is to utilize the DHIM to systematically interrogate the immune response to DENV infection. We will evaluate the protective immune response using a vaccination/challenge model as well as sequential, heterotypic DENV infection (natural infection model) to identify putative correlate(s) of protection.
Role: Principal Investigator

NIH/NIAID - HHSN272200900010C 4/1/09-3/31/16
Operation of a facility for the study of infectious agents, vaccines and antimicrobials in adults and pediatric human subjects
To evaluate the safety and immunogenicity of novel live attenuated vaccines for the prevention of flavivirus infections and to use these studies as a model for primary flavivirus infection to better understand the immunopathogenesis of flavivirus-related disease.
Role: Co-principal Investigator of this contract and Principal Investigator of the dengue vaccine trials conducted under this contract.

International Vaccine Institute (IVI) via a grant from Bill and Melinda Gates Foundation.
1/1/11 – 5/18/2015 (NCE)